

IMPROVED METADATA ACCESS DURING ERROR HANDLING ROUTINES

ABSTRACT

[26] A data storage control unit is coupled to one or more host devices and to one or more physical storage units. Data is stored in one of the storage units and, for data integrity, copied to another storage unit. An updated state of the copy process (metadata) is maintained and updated in metadata tracks in a memory of the storage controller and periodically destaged to corresponding metadata tracks of a storage unit. If the copy process is interrupted, such as by a power failure, an error handling routine commences. Track state fields associated with each in-memory metadata track are initialized to an 'invalid' state and background staging of metadata tracks from the storage unit to the memory. After a track is staged, the associated track state field is changed to a 'valid' state. If a request is received to access a track of copy state data and the track has been staged (as indicated by the state of the associated track state field), the track is accessed. If the requested track has not been staged, requester waits while the requested track is staged; then the requested track is accessed. Once the error handling routine is completed, normal I/O operations with customer data may resume. Preferably, completion of the error handling routine is independent of the completion of the staging of copy state data tracks.